We Claim As Our Invention

1. A laser transmitter circuit, comprising:

a variable voltage driver having an output and a control input;

a laser diode;

a resistor connected in series between the output of the variable voltage driver and the laser diode for converting output voltage from the variable voltage driver into a variable AC current drive signal to the laser diode; and

a potentiometer connected to the control input of the variable voltage driver.

2. The laser transmitter of Claim 1, further comprising:

a capacitor connected in parallel with the resistor.

3. The laser transmitter of Claim 2, wherein the capacitor is a variable capacitor which functions to speed up rise and fall times of the variable AC current signal to the laser diode.

4. The laser transmitter of Claim 1, wherein the potentiometer is a digital potentiometer.

5. The laser transmitter of Claim 1, wherein the variable voltage driver includes an Arizona Microtek AZM100EL16VS.

6. The laser transmitter of Claim 1, wherein the resistor connected in series with the output of the variable voltage driver converts output voltage of the variable voltage driver into a variable AC current drive signal.

7. The laser transmitter of Claim 1, wherein the resistor connected in series between the output of the variable voltage driver and the laser diode functions to create a variable AC laser diode current signal, and the laser diode is responsive to the variable AC laser diode current signal for lasing and thereby producing an optical data output signal.

8. A laser transmitter, comprising:

a variable voltage driver having an output and an input control;

a laser diode;

a resistor connected in series between the output of the variable voltage driver and the laser diode.

a variable voltage controller connected to the input control of the variable voltage driver.

9. The laser transmitter of Claim 8, wherein the variable voltage controller includes a potentiometer connected to the input control.

10. The laser transmitter of Claim 9, wherein the potentiometer is a digital potentiometer.

11. The laser transmitter of Claim 9, wherein the variable voltage controller includes a pull-up resistor connected to a variable current source.

12. The laser transmitter of Claim 8, further comprising:

a capacitor connected in parallel with the resistor.

13. The laser transmitter of Claim 12, wherein the capacitor is a variable capacitor.

14. The laser transmitter of Claim 8, further comprising:

an automatic power control circuit (APC) for setting and controlling average power emitted by the laser diode.

15. The laser transmitter of Claim 14, wherein the variable voltage controller and the APC are configured into an integrated circuit.

16. A laser transmitter, comprising:

a voltage driver having an output;

a laser diode;

a resistor connected in series between the output of the voltage driver and the laser diode;

an automatic power control (APC) for setting and controlling the laser diode output power;

a first digital potentiometer connected to the APC so as to set output power of the laser diode; and

a digital shift register with a serial input and parallel outputs, wherein the parallel outputs are connected to the digital potentiometer for setting the resistance of said digital potentiometer.

17. The laser transmitter of Claim 16, wherein said voltage driver is a variable voltage driver, said laser transmitter further comprising:

a variable voltage control connected to said voltage driver; and

a second digital potentiometer connected to said variable voltage control so as to produce a variable output control voltage.

18. The laser transmitter of Claim 16, wherein the APC includes the first digital potentiometer.

19. The laser transmitter of Claim 16, wherein the automatic power control (APC), the first digital potentiometer, and the digital shift register are configured into an integrated circuit.

20. The laser transmitter of Claim 16, further comprising:

a laser fault latching circuit for monitoring output power emitted by the laser diode; and

a laser disable circuit for preventing current flow to the laser diode when excess output power is detected.